REMARKS

Claims 1-10 are pending in this application. Reconsideration in view of the following additional comments is respectfully requested.

Applicants appreciate the courtesies shown to Applicants' representative by Examiners Warden and Cole in the June 19 personal interview. In response thereto, additional comments are provided.

I. Pending Claims 1-10 Define Patentable Subject Matter

In the Office Action, claims 1-6 and 8 are rejected under 35 U.S.C. §102(b) over U.S. Patent No. 5,339,482 to Desimone. Additionally, claims 7, 9 and 10 are rejected under 35 U.S.C. §103(a) over Desimone. These rejections are respectfully traversed.

As discussed during the June 19 personal interview, it is an essential feature of the present invention as defined by independent claims 1 and 8 that the first and second parts "are firmly connected to one another by a shrink fit caused by the injection-molding operation." Further, it is important that the first and second molded parts "do not form a chemical bond during the injection-molding operation." See Applicants' specification at, for example, page 2, lines 21-30.

As also discussed and agreed upon, during the interview, the claimed method of independent claim 8 and claims 9-10 dependent therefrom differ from and appear to be patentably distinct from the wholly different method of toothbrush manufacture provided in Desimone.

With respect to independent product claim 1, several inherent structural differences were outlined in Applicants' June 19 response. Applicants' now expand upon these differences.

First, because the claimed invention uses "shrinkage fitting" of the two different molded parts, both parts can be made of a hard plastic and still achieve a positive connection

or fit. Such is not the case in Desimone since Desimone requires, as discussed previously, that one of the two separately molded parts is "pliable" or "compressible." See paragraph 5, lines 9-24.

Thus, as shown in the various samples presented during the interview, the first and second molded parts of the claimed invention can be formed from different hard plastics. For example, one may consist of polypropylene while the other consists of styrene acrylonitrile (SAN) (claim 6) or acrylonitrile-butadiene, styrene, polyamide, polycarbonate or polyester (claim 7). This cannot be achieved by Desimone. This is one example of a structural difference.

Second, the handle can be formed from a transparent material. Applicants' prior arguments pointed out that SAN is inexpensive and not resistant to aggressive toothpaste substances. This is still true. However, another property of SAN is that it is highly transparent and relatively inexpensive compared to other transparent materials. In this regard, Applicants' prior comments that polypropylene (PP) is expensive were somewhat inaccurate. PP is also inexpensive. However, it is not transparent, as is SAN, which has the transparency of glass. Thus, with the claimed invention, only the molded part of the toothbrush having the brush head has to be produced from a plastic material that is resistant to such aggressive substances (such as inexpensive polypropylene (PP)) while the remainder of the toothbrush (i.e., the handle portion) can be made of a plastic material of lesser resistance, such as SAN, which is completely transparent. Because SAN is both transparent and inexpensive compared to many other transparent materials, it allows for the production of a favorably priced toothbrush with a head that is resistant to toothpaste products (i.e., made of PP), and has a completely transparent handle portion (i.e., made of for example SAN) that is important for aesthetic and other purposes, including low cost. This is a second structural difference because the head in Desimone must be resistant to toothpaste products, so a

relatively hard PP or other plastic would be used. Because the other material has to be "compressible", which SAN is not, a transparent SAN could not be used as the second material in Desimone.

Third, the inventive product made by the inventive process of "shrink fit molding" allows the use of a complex geometry between the parts. This is not achievable by products made using the Desimone method. For example, Desimone forces an insert formed in a separate molding operation into an aperture of the handle. Because of this, the two molded parts cannot have a complex geometry. However, with the claimed invention, very complex shapes can be formed. See, for example, the part 4 shown in Fig. 5 which after the molding operation is provided inside of part 6 shown in Fig. 6 (shown assembled in Figs. 1-3). Such a complex product could not be formed using the Desimone method. Thus, a third structural distinction is that the resultant product-by-process toothbrushes can have drastically more complex shapes than corresponding toothbrushes formed by the Desimone method.

Fourth, Desimone forms an insert in a separate molding operation and forces this insert into an aperture of the handle. At the time of insertion, the insert is already shrunk. That is, further shrinkage does not occur after insertion into the other molded part. As a consequence, the Desimone toothbrushes are not watertight in the region of the contact surfaces of the insert and handle. On the contrary, the inventive products can be made water-tight. This is thus a fourth structural distinction over the corresponding products made by the Desimone method.

Thus, although similar, there are many subtle structural property differences formed as a result of the inventive process of manufacture that cannot be duplicated by Desimone's disclosed process.

Although the Patent Office typically determines patentability of product-by-process claims based on the product itself, the Patent Office must consider structure implied by the

process when assessing patentability where the process steps impact distinctive structural characteristics to the final product. See In re Garnero, 412 F.2d 276, 162 USPQ 221 (CCPA 1979) and MPEP §2113. The above structural distinctions are made possible by the claimed product by process.

The Examiners during the July 19 interview also questioned the order of the parts (i.e., whether the outer part had to shrink relative to the inner part). Applicants believe that the order or definition of which part is first molded is unnecessary for the following reasons. The Examiner's recognized operability if the "outer part" shrinks relative to the "inner part." However, it should be drawn to the Examiner's attention that the molded parts shrink not only in diameter, but also longitudinally. For example, in the embodiment shown in Applicants' Figs. 1-7, the molded part 4 (first part) and the molded part 2 (second part) are firmly connected by shrink fit since the first molded part ("outer part" as seen radially) is disposed between the offset surface 9 and the offset surface 16 of the molded part 2 ("inner" part). In particular see Fig. 5. In this example, the shrinkage of the "inner part" in the longitudinal direction causes the shrink fit. Thus, it is possible for either the outer or inner part to shrink and obtain a friction fit.

II. Pending Claims Define Over Other Identified Prior Art

During the June 19 personal interview, two previously uncited references were discussed briefly. Applicants respectfully request that these two references, U.S. Patent No. 5,761,759 to Leversby et al. and U.S. Patent No. 6,076,223 to Dair et al. be formally listed on a PTO-892 so as to become part of the official record.

Although not yet formally considered as relevant prior art, Applicants provide the following comments on these references to expedite prosecution.

Leversby 759 does not teach or disclose the use of different plastic materials that do not form a chemical bonding during an injection molding operation. Leversby 759 also does

not teach the claimed "shrink fit" by injection molding. Rather, Leversby discloses in col. 3, lines 2-4 that the second material could be of the same type as the first. Since this would lead to a chemical bond, it is clear that Leversby is not concerned with a molding process that does not involve chemical bonding. As such, Leversby cannot anticipate any of the pending claims.

Dair 223 discloses two different possibilities. First, a non-slip surface 26 and 28 may be fabricated from an elastomeric material...These parts may be fabricated, such as by molding, in a separate operation and then attached to the handle with an adhesive or be formed as interlocking parts which are snapped into place. See col. 4, lines 11-19. Second, it is disclosed that the bulk of handle 12 is fabricated from a polypropylene material 38 and non-slip regions 26 and 28 and cup-shaped member 24 are fabricated from a thermoplastic rubber 40. Dair does not disclose that the materials do not form a chemical bond and does not teach a shrink fit as a result of the injection molding process. As such, the Dair disclosure cannot anticipate any of the pending claims.

Withdrawal of the current rejections is respectfully requested.

III. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-10 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

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